



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

NOV 9 2015

Ala Wai Canal Project
U.S. Army Corps of Engineers
Honolulu District
ATTN: Mr. Derek Chow
Chief, Civil and Public Works Branch
Building 230 (CEPOH-PP-C)
Fort Shafter, HI 96858-5440

Subject: Ala Wai Canal Project Draft Feasibility Study with Integrated Environmental Impact Statement, Oahu, Hawaii [CEQ# 20150273]

Dear Mr. Chow:

The U.S. Environmental Protection Agency has reviewed the Draft Feasibility Study with Integrated Environmental Impact Statement (DFS/EIS) for the Ala Wai Canal Project, Oahu, Hawaii. Our review and comments are pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The EPA supports the U.S. Army Corps of Engineers' goal of reducing flood risk in the Ala Wai Watershed. According to the DFS/EIS, a high risk of flooding exists within the watershed because of natural geography, coupled with aging and undersized flood conveyance infrastructure. The Notices of Intent for this project, published on June 14, 2004 and October 2, 2008, indicated dual goals of flood hazard reduction and ecosystem restoration. The feasibility study has since been re-scoped to focus on flood risk management, with ecosystem restoration eliminated as an objective.

The DFS/EIS identifies Alternative 3A-2.2 as the tentatively selected plan, and as the least environmentally damaging practicable alternative (LEDPA) for the project. Alternative 3A-2.2 would reduce flood risks by improving the flood warning system, and constructing six in-stream debris and detention basins in the upper reaches of Makiki, Manoa, and Palolo streams, one stand-alone debris catchment feature, three multi-purpose detention areas in open spaces in the developed watershed, and concrete floodwalls up to four feet tall along the Ala Wai Canal (including three pump stations). Given the extent of development within the watershed, and the fact that flooding is likely to be exacerbated by climate change and associated projected increases in sea level rise in the future, we recognize the need for improved flood risk management. Investing in a suite of management measures, as described in Alternative 3A-2.2, should be helpful in reducing flood risk and property damage within the watershed.

Although we reviewed all of the alternatives evaluated in the DFS/EIS, our rating is based on our evaluation of Alternative 3A-2.2. We have rated Alternative 3A-2.2 and the DFS/EIS document as *Environmental Concerns – Insufficient Information* (EC-2). Please see the enclosed "Summary of EPA

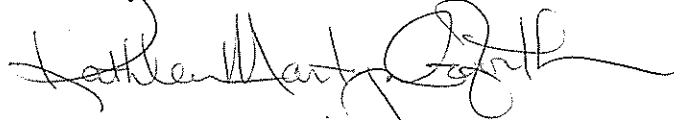
Rating Definitions.” We understand that a formal jurisdictional delineation of Waters of the U.S. has not yet been completed for the project area and the full extent of impacts to jurisdictional waters, including *special aquatic sites*, is not known. We recommend that the Final Feasibility Study/Environmental Impact Statement (FFS/EIS) include the verified jurisdictional delineation and demonstrate more clearly that the preferred alternative is the LEDPA.

We understand that the endangered blackline Hawaiian damselfly has been identified within the proposed footprint of the Waihi debris and detention basin, a component of Alternative 3A-2.2, and that the Corps intends to consult with the U.S. Fish and Wildlife Service regarding this species. EPA is concerned about potential impacts to this species, and the possibility that it may be present at other locations. Options to avoid known populations of this endangered species should be considered, including locating the Waihi debris and detention basin at an alternative site, or eliminating this component altogether. EPA is also concerned that the proposed project may result in increased dispersal of contaminated sediment that may impact water quality and fish and wildlife resources. We recommend that the FFS/EIS include an update on the Corps’ consultation with the FWS.

Although the Ala Wai Canal Project incorporated several strategies to reduce flood risk, some actions, such as improving the storm drainage system and routine dredging of the canal, were determined to be outside the scope of the study. Understanding the current condition of the stormwater management system and how dredging the Canal could affect flood risk, as well as water quality, are intrinsically important in understanding how the watershed functions. We recommend that the FFS/EIS discuss these topics in greater detail. We also recommend that the FFS/EIS provide additional information on proposed maintenance of the detention basins, critical infrastructure remaining in the floodplain, and flood risk associated with tsunamis and hurricane storm surge. Please see the enclosed detailed comments for additional concerns and recommendations.

We appreciate the opportunity to review and comment on this DFS/EIS, and are available to discuss the recommendations provided. When the FFS/EIS is released for public review, please send one hard copy and one CD to the address above (Mail Code: ENF 4-2). Should you have any questions, please contact me at (415) 972-3521, or contact Ann McPherson, the lead reviewer for the project. Ann can be reached at (415) 972-3545 or mcpherson.ann@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kathleen Martyn Goforth', written over a horizontal line.

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosures: Summary of EPA Rating Definitions
EPA Detailed Comments

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

U.S. EPA DETAILED COMMENTS ON THE ALA WAI CANAL PROJECT DRAFT FEASIBILITY STUDY WITH INTEGRATED ENVIRONMENTAL IMPACT STATEMENT, OAHU, HAWAII, NOVEMBER 9, 2015

Impacts to Waters of the United States

The Ala Wai Canal Project Draft Feasibility Study with Integrated Environmental Impact Statement (DFS/EIS) includes a draft Clean Water Act Section 404(b)(1) Evaluation that describes flood risk management measures and associated compensatory mitigation measures for the proposed project (Appendix E-3). The DFS/EIS identifies the tentatively selected plan as the least environmentally damaging practicable alternative (LEDPA) and includes estimated excavation and discharge of fill within Waters of the U.S. (pgs. 5-12, 13). According to the DFS/EIS, proposed fill activities would comply with Section 404(b)(1) guidelines; however, a formal jurisdictional determination of Waters of the U.S. has not yet been completed for the project area (pg. 5-11). The upper reaches of the streams contain riffle and pool complexes that qualify as *special aquatic sites*, a subset of Waters of the U.S. that is afforded additional consideration (pg. 5-11).

Recommendations:

Include, in the Final Feasibility Study/Integrated Environmental Impact Statement (FFS/EIS), the verified jurisdictional delineation of Waters of the U.S. by the U.S. Army Corps of Engineers. Describe the condition of Waters of the U.S. and quantify anticipated impacts, in acres, including any impacts to riffle and pool complexes or other *special aquatic sites*. Given the extent of riffle and pool complexes, EPA strongly recommends that a comprehensive alternatives analysis be completed in order to ensure compliance with the CWA Section 404(b)(1) guidelines.

Discuss, in the FFS/EIS, the reasons why the tentatively selected plan was identified as the LEDPA. Identify other alternatives considered in the CWA Section 404(b)(1) evaluation.

Disclose, in the FFS/EIS, whether there are any wetlands or sensitive habitat adjacent to the Ala Wai Canal, and if so, identify and quantify the potential impacts to these features, in acres.

Impacts to Endangered Species and Habitat Loss

Although the endangered blackline Hawaiian damselfly was originally thought to be restricted to higher elevations and not present in the project area, it was identified by the U.S. Fish and Wildlife Service within the proposed footprint of the Waihi debris and detention basin on July 28, 2015 (Appendix E1, pg. 2). According to the DFS/EIS, the Corps intends to initiate formal Section 7 consultation upon receipt of species information from the FWS. The U.S. Environmental Protection Agency is concerned about potential impacts to this species, including loss of habitat, and the possibility that it may be present at other locations in the project area. Options to avoid known populations of the blackline Hawaiian damselfly should be considered, including siting the Waihi debris and detention basin at an alternative location, or eliminating it altogether.

Recommendations:

Update, in the FFS/EIS, the discussion of how the tentatively selected plan would comply with the Endangered Species Act. Include additional documents (e.g. Biological Assessment and Biological Opinion) associated with the ESA Section 7 consultation process in Appendix E5.

Discuss, in the FFS/EIS, the potential loss of blackline Hawaiian damselflies and its breeding habitat. Disclose whether biologists have conducted surveys for black Hawaiian damselflies at

the other sites in the study area and whether they were found elsewhere. Quantify the loss of aquatic habitat associated with the black Hawaiian damselfly.

Consider options to avoid known populations of the blackline Hawaiian damselfly, including siting the Waihi debris and detention basin at an alternative location, or eliminating it altogether.

Hawaiian Stream Habitat Evaluation Procedure (HSHEP) Model

According to the DFS/EIS, the Hawaiian Stream Habitat Evaluation Procedure (HSHEP) model was used to quantify the loss of aquatic habitat associated with the proposed project (pg. 5-43). The results indicate the tentatively selected plan would result in a total loss of 192 habitat units. The project incorporates compensatory mitigation to offset these anticipated losses. Mitigation measures identified include in-stream improvements to eliminate migratory passage barriers for native species at two locations in Manoa Stream. It is not clear, however, whether the HSHEP model accounts for the loss of black Hawaiian damselflies and its breeding habitat, or the loss of habitat resulting from the construction and use of debris and detention basins in the study area. It is also not clear whether the HSHEP model accounts for degraded water quality due to mobilized contaminated sediment, or the increased exposure risk for fish and wildlife found within stream and coral reef habitat.

Recommendations:

Discuss, in the FFS/EIS, whether the HSHEP model accounts for: 1) the loss of blackline Hawaiian damselflies and its breeding areas; 2) the loss of aquatic habitat associated with debris and detention basins in the study area; 3) degraded water quality due to mobilized contaminated sediment; and 4) increased exposure risk for fish and wildlife resources found within stream and coral reef habitat. Incorporate these factors into the HSHEP model, if feasible, and summarize the results, accordingly.

Identify, in the FFS/EIS, additional mitigation measures to offset specific project impacts that cannot be avoided or further minimized.

Dispersal of Contaminated Sediment

Historically, large quantities of sediment have been deposited in nearshore waters during storm events. Sediment loading contributes to habitat degradation in the streams and in the nearshore marine environment by smothering substrate, filling interstitial spaces, and harming coral reef communities. Both dieldrin and chlordane have been detected in fish and stream bed sediment samples from Manoa Stream in quantities that exceed aquatic life and wildlife protection guidelines (pg. 5-27). According to the DFS/EIS, the project is not expected to result in significant water quality impacts, either within the streams or nearshore waters (including essential fish habitat); rather, some degree of benefit may be realized through the capture and removal of sediment from the debris and detention basins (pg. 5-45).

According to the DFS/EIS, the detention basins will require periodic removal of sediment/debris (pg. 5-31). The document does not discuss how this will be accomplished, what type of equipment will be required, the frequency of clean-up or other maintenance activities, such as erosion control, that may be necessary. After a storm event, sediment and debris will cover the detention basins. The sediment may contain contaminants and could pose a health risk. Rainfall will generate overland flow and may cause erosion. Infiltration could also lead to further dispersal of contaminants. Removal of sediment and debris from the detention basins will likely be accomplished using heavy equipment and this will be destructive to the natural habitat. Exposure of topsoil to erosive forces may also result in increased transport of

sediment downstream. The mobilized contaminants in the sediment have the potential to impact water quality, as well as fish and wildlife resources within stream and coral reef habitat. These impacts, however, are not discussed within the DFS/EIS.

Recommendations:

Discuss, in the FFS/EIS, the potential for sediment reaching nearshore waters during storm events, or possibly during tidal fluctuations, and how contaminants in the sediment could impact water quality as well as fish and wildlife resources within stream and coral reef habitat.

Describe, in the FFS/EIS, maintenance activities that would be conducted for the detention basins, including the types of equipment required to remove sediment and debris, how frequently the basins would be inspected and cleaned, whether the sediment would be tested for contaminants prior to disposal, where the sediment and debris would be transported, and how long these activities are anticipated to take.

Describe any management actions that would be taken in the event that new vegetation infills the detention basins. For example, would it be allowed to grow or would it be removed? If the latter, how would it be removed and how frequently?

Incorporating Strategies to Improve Stormwater Management and Reduce Nonpoint Source Pollution

Nonpoint source pollution can be reduced with smart planning efforts. When properly designed and maintained, detention basins can reduce fine sediment concentrations in suspension; trap large particles, resulting in protection and maintenance of downstream channel geometry and flow conveyance; reduce downstream peak flows, decreasing in-channel erosion rates; enhance groundwater recharge; and attenuate flood impacts. We urge the Corps to consider ways to reduce nonpoint source pollution in tandem with the design of components (debris and detention basins) in the tentatively selected plan.

Recommendations:

Consider ways to minimize nonpoint source pollution, particularly during the design of the debris and detention basins. For example, revegetation practices can decrease overland flow and erosion. Baffle boxes can be used to reduce the concentration of fine sediments, nutrients, and other NPS pollutants.

Consider other opportunities or programs to reduce runoff volumes and improve runoff/water quality in the project area. For example, harvesting runoff and storing it in rain barrels or subsurface water tanks can also be effective in reducing peak flows.

Describe, in the FFS/EIS, the Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) permit. Consider this regulatory overlay and any pertinent requirements of the NPDES MS4 permit when looking for additional opportunities to reduce runoff volumes and improve runoff water quality.

Dredging of the Ala Wai Canal

As noted in the DFS/EIS, the Ala Wai Canal was originally constructed to provide drainage, not flood protection. Based on current modeling, the Canal is expected to only contain a 20-percent annual chance exceedance (ACE) flood (pg. 2-4). The Ala Wai Canal captures sediment that is transported via its tributary streams and generally serves as a sink for the watershed (pg. 5-28). According to the DFS/EIS,

maintenance dredging of the Canal is expected to start in 2017, but is not expected to reduce flood impacts, or significantly affect potential flood damages (pg. 1-8).

Recommendations:

Explain, in the FFS/EIS, why maintenance dredging of the Canal would not result in a reduction in flood impacts. Provide, if possible, the ACE flood the Canal would be expected to contain after dredging.

Clarify, in the FFS/EIS, whether the current capacity and post-dredging capacity of the Ala Wai Canal have been accounted for during the design of the upstream detention basins, as well as the design of the floodwalls along the Canal.

Discuss, briefly, the environmental benefits that may be realized in conjunction with regular dredging of the Canal.

Implications of Aging and Undersized Infrastructure

According to the DFS/EIS, the City and County of Honolulu (CCH) is responsible for the island's storm drain system, which captures storm water and conveys it directly to streams, canals, and/or the ocean to prevent flooding in developed areas (pg. 5-82). The storm drainage system is aging and in need of improvements to meet present day development and runoff levels (pg. 2-4). Portions of the drainage system in the lower elevations of the watershed are also influenced by tidal waters, further reducing their capacity (pg. 5-11). The extent to which the aging and undersized infrastructure affects flooding within the study area is not discussed, except to note that CCH is developing plans and projects to address storm drainage issues (pg. 2-4).

Recommendations:

Discuss, in the FFS/EIS, the deficits associated with aging and undersized infrastructure in the project area. Describe, at least qualitatively, how these deficits contribute to flooding, both on a local and regional scale, within the project area.

Describe, in the FFS/EIS, how projected sea level rise will further impact stormwater conveyance infrastructure and how this may contribute to an increase in flooding within the lower reaches of the watershed.

Provide, in the FFS/EIS, an update on CCH plans and projects to address storm drainage infrastructure. Evaluate the extent to which these plans and projects can be expected to reduce flood risk within the project area.

Critical Infrastructure Remaining in the 1-percent ACE Floodplain

According to the DFS/EIS, although Alternative 3A.2-2 would protect the majority of the watershed from the 1-percent ACE floodplain, it would not entirely eliminate flood risk, and areas of the Makiki watershed would incur greater damage than other areas (pg. 8-4). For Alternative 2A, infrastructure remaining in the 1-percent ACE floodplain includes two fire stations (Makaloa station in Ala Moana and Wilder station in Makiki), two nursing facilities (Hale Nani in Makiki and Manoa Cottage in Kaimuki), and two emergency shelters (Lunalilo Elementary and Washington Intermediate in McCully-Moiliili). It is unclear whether Alternative 3A would reduce flood risk to these six structures. Notably, Hale Nani is a large skilled nursing facility with approximately 288 beds. Given the aforementioned vulnerability to

damage of areas in the Makiki watershed and the challenges of evacuating residents in a skilled nursing facility during an emergency, EPA is concerned about the residual flood risk in that area.

Recommendations:

Illustrate, in the FFS/EIS, the location of critical infrastructure that would remain in the 1-percent ACE floodplain for both Alternative 2A and 3A. Clarify whether Alternative 3A would reduce the flood risk to such structures and assess the likely effectiveness of any measures in place to protect critical infrastructure or inhabitants in the event of flooding, such as plans to evacuate residents at Hale Nani and Manoa Cottage.

Evaluate, in the FFS/EIS, whether incorporating the Roosevelt debris and detention basin, or other measures, would reduce the residual flood risk, particularly to the Hale Nani nursing facility and other critical infrastructure. If so, reconsider adding these measures to the tentatively selected plan.

Flood Risk from Tsunamis and Hurricanes

The management measures proposed are designed specifically to reduce riverine flood risks in the Ala Wai Watershed and are not designed to protect against hurricane storm surge or tsunamis. As noted, hurricane-related storm surge and tsunamis can cause flood damage in the lower portions of the watershed (pg. 2-5). Flood-producing rainfall usually occurs during the wet season (October to April); whereas, hurricanes are most likely to occur between June and November. The DFS/EIS indicates that, given the low probability of these events occurring at the same time, it was decided that potential storm surge would not be included as part of the hydraulic modeling (pg. 2-5). The EPA is concerned about the decision to not include storm surge in the hydraulic model, as it seems possible that a slow moving hurricane could drop a significant amount of rainfall over the watershed, resulting in riverine flooding as well as storm surge. It is important to understand the limitations associated with flood protection measures that focus on riverine flooding, as opposed to flooding from storm surge or tsunamis.

Figures 15a and b illustrate the 1-percent ACE flood, as well as the Flood Insurance Rate Map (FIRM) 1-percent ACE flood boundary and coastal surge zone (pgs. 5-19 and 20). The FEMA Flood Zone A encompasses a large area outside the 1-percent ACE flood. According to the DFS/EIS, some of the flood-risk reduction measures – such as the Ala Wai Canal floodwalls – would be expected to provide protection from storm surge (pg. 2-5). The extent to which the walls would provide protection, however, is unknown. According to the DFS/EIS, additional risk analysis may be conducted by running a performance check of a worst-case scenario involving coincident events (e.g., hurricane-related surge at high tide, with 1-percent ACE riverine flooding), and comparing the effect relative to the height of the proposed floodwalls (pg. 8-7).

Recommendations:

Describe, qualitatively, in the FFS/EIS, how storm surge and tsunamis could impact the Ala Wai Watershed. Illustrate the storm surge zone clearly.

Run a performance check of coincident rainfall and storm surge or tsunami events, as described above, and discuss the results in the FFS/EIS.